

Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

Photon-Hadron Correlations in p-p Collisions with the PHENIX Detector MATTHEW NGUYEN, Brookhaven National Laboratory, PHENIX COLLABORATION — Hard scattering in the γ -jet channel is thought to be a clean observable for energy-loss studies in heavy-ion collisions and spin asymmetries in polarized proton collisions. The measurement of photon-hadron correlations in unpolarized p+p collisions is an important baseline. pQCD calculations describe direct photon production reasonably at in the relevant x_T range, however theoretical uncertainties are non-negligible. Initial and final state radiation present at Next-to-Leading Order may complicate the interpretation of experimental results. Moreover, non-perturbative quantities which influence the yield of photon-hadron pairs, particularly the gluon distribution function and photon fragmentation function, are poorly constrained by the world data in the kinematic range of interest. Photon-hadron correlation data from RHIC at $\sqrt{s} = 200$ GeV should serve as a benchmark with which to compare data in polarized p-p and nuclear collisions where γ -jet data represent experimental signatures of possible gluon spin effects and Quark-Gluon Plasma formation, respectively. Recent PHENIX data will be presented.

Matthew Nguyen
Brookhaven National Laboratory

Date submitted: 02 Jul 2007

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